

Re: Java outperforms C++?

Source: <http://www.tech-archive.net/Archive/VC/microsoft.public.vc.language/2005-04/msg00848.html>

- *From:* Jerry Coffin <jcoffin@xxxxxxxxxx>
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In article <Xns96399349F385Fqqasdfh76d3f4hasdf78@xxxxxxxxxxxxxxxx>, sdfjkhsdkh@xxxxxxxxxxxxxxxxxxxxxxxxxxxx says...

[...]

> However I've found a caveat. Replacing
> bool state;
> with
> int state;
> and using
> state = -state
> instead of
> state = !state
> got results down to 3.9s. I didn't know that bool was so inefficient
> :)

...but that's not all. For only \$49.95, the amazing C++ compiler not slices and dices, but it can cook your coffee even faster than that!

What we have is still really transliterated Java. Creating the objects with new and accessing them via pointers is just leftover coffee grounds (so to speak). In real C++, they're just automatic variables:

```
int
main(int argc, char *argv[]) {
int n = ((argc == 2) ? atoi(argv[1]) : 1);

bool val;
Toggle toggle(true);
for (int i=0; i<n; i++)
val = toggle.activate().value();

std::cout << std::boolalpha << val << std::endl;

NthToggle ntoggle(true, 3);
for (int i=0; i<n; i++)
val = ntoggle.activate().value();
```

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```
std::cout << val << std::endl;

return 0;
}
```

This is taking 2.9 seconds for 1 000 000 000 iterations on a 2.8 GHz P4. On the same machine, the Java version takes 21.8 seconds to run the same number of iterations. IOW, where your code is about 5 1/2 times as fast as Java, this is more like 7 1/2 times as fast.

I'd also note that along with being a lot faster, getting rid of the new and being able to write bools out directly makes this cleaner and more readable as well.

Of course, the rest of the code is equally java-like. Just for example, 'if (++this->counter >= this->count_max)' works just as well as: 'if (++counter >= count_max)'.

C++ written by Java programmers reminds me of the old line about the US and Great Britain being separated by a common language.

Then again, he's also made his Toggle::state public — which I'd hope even Java programmers would recognize is a truly bad idea. He's apparently done this because his code in NthToggle manipulates state directly instead of using the base class method to do so, as in:

```
Toggle& activate() {
if (++counter >= count_max) {
Toggle::activate();
counter = 0;
}
return(*this);
}
```

IMO, this is really the right way to do things, but even if he insisted on manipulating the base class variable directly in the derived class, he could have at least made the variable protected.

Then again, he does more or less the same thing in his Java as well — to its great detriment, as it turns out. In NthToggle::activate, if we replace 'this.state = !this.state;' with 'super.activate();', the Java version speeds up from 21.8 seconds to 8.5 seconds, or only about 3 times slower than the C++ version.

Along with being a speedup for Java, this makes the code much more a test of method calling — clearly most the time in his Java code was being spent on up-level variable access, not method calls.

Given that I'm not a Java programmer at all, and it was still easy for me to speed his Java code up by a factor of about 2 1/2, I'm left wondering whether competently written Java might actually be able to

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keep up with C++. Unfortunately, if the benchmarks that purport to compare the two are any indication, competently written Java is so rare that we'll probably never know!

Then again, deriving "NthToggle" from "Toggle" seems to indicate such ignorance of the LSP that this person probably shouldn't be allowed to use derivation again without completing a remedial OOD course. :-)

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Later,
Jerry.

The universe is a figment of its own imagination.

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• *References:*

- ◆ ***Java outperforms C++?***
 - ◇ *From:* benben
 - ◆ ***Re: Java outperforms C++?***
 - ◇ *From:* \$Scott
 - ◆ ***Re: Java outperforms C++?***
 - ◇ *From:* Alex
 - ◆ ***Re: Java outperforms C++?***
 - ◇ *From:* \$Scott
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 - ◇ *From:* Alex
 - ◆ ***Re: Java outperforms C++?***
 - ◇ *From:* Mark Randall
 - ◆ ***Re: Java outperforms C++?***
 - ◇ *From:* Mark Randall
 - ◆ ***Re: Java outperforms C++?***
 - ◇ *From:* Alex
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